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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/246,641	12/22/1999	TSUYONOBU HATAZAWA	P99.2641	2680

26263 7590 09/05/2002

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EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 09/05/2002

16

Please find below and/or attached an Office communication concerning this application or proceeding.

ms - 16

Office Action Summary

Application No.
09/446,641

Applicant(s)
Hatazawa et al.

Examiner
Tracy Dove

Art Unit
1745



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 14, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

This Office Action is in response to the communication filed on 3/14/02. Applicant's arguments have been considered, but are moot in view of the new grounds of rejection. Claims 10-19 are rejected in view of the prior art.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/14/02 has been entered.

Information Disclosure Statement

The information disclosure statement filed 4/3/00 has been considered.

Claim Rejections - 35 USC § 112

All 35 U.S.C. 112 rejections have been withdrawn.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Gao et al., US 5,756,230.

Gao teaches a method of improving the structural integrity of an electrode binder and a polymeric matrix component of an electrochemical cell by employing polymer blends comprising fluoropolymers. See abstract. With the inventive fluoropolymer blends of Gao, the polymer binders of the anode and cathode and the polymeric layer of the electrolyte (solid) do not become brittle and crack under stress. See col. 2, lines 1-38. The fluoropolymer blends are described in col. 4, lines 19-67. The individual polymers of the blend may be homopolymers having a molecular weight in the range of 50,000 to 900,000, copolymers having a molecular weight in the range of 10,000 to 900,000 or terpolymers having a molecular weight in the range of 10,000 to 900,000. Note polytetrafluoroethylenes and polyvinyl fluorides are preferred homopolymers and

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polyvinylidene fluoride-hexafluoropropylene is a preferred copolymer. For blends comprising a homopolymer and a copolymer, the relative weight percentage of the homopolymer preferably ranges from about 90% to 50%. See col. 5, lines 5-23. The cathode may comprise a lithium transition metal oxide and the anode may comprise carbon (col. 5, lines 59-65). Lithium ion cells are rechargeable. Lamination causes the polymeric components of the anode and cathode precursors to adhere to the polymeric layer (Example 3). The electrochemical cell includes an electrolytic solvent such as an organic carbonate (col. 5, lines 36-67).

Thus the claims 10 and 12-19 are anticipated.

Regarding claim 11, Gao teaches a fluoropolymer blend of a homopolymer having a molecular weight in the range of 50,000 to 900,000 and a copolymer having a molecular weight in the range of 10,000 to 900,000. Gao further teaches a polymer blend of a homopolymer having a molecular weight in the range of 50,000 to 900,000 and a terpolymer having a molecular weight in the range of 10,000 to 900,000. See col. 4, lines 44-65 and col. 5, lines 6-23). Thus, Gao anticipates claim 11.

Claims 10 and 12-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al., US 6,096,101.

Liu teaches a polymeric structure suitable for an anode, a cathode and/or a solid electrolyte of an electrochemical cell. See abstract. The polymer is preferably a fluoropolymer such as polyvinylidene fluoride (PVDF), polyvinylidene fluoride-co-hexafluoropropylene and

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mixtures thereof (col. 2, lines 52-54). The PVDF is about 70-99.9% of the copolymer. Preferred molecular weights of the fluoropolymers are from 10,000 to 700,000 (col. 5, lines 31-41). The cathode material may be a lithium transition metal oxide (col. 8, lines 17-26) and the anode material may be an intercalation carbon material (col. 9, lines 44-55).

Thus the claims are anticipated.


Response to Arguments

Applicant's arguments with respect to claims 10-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

August 29, 2002


CAROL CHANEY
PRIMARY EXAMINER